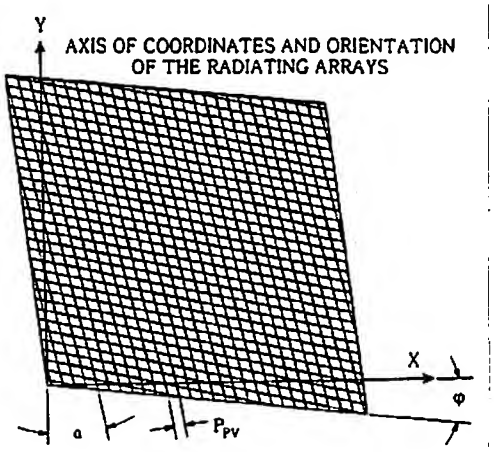
REMARKS

In the Office Action, pending Claims 1-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,483,248 to Milroy in view of WO 03/044896 to Teshirogi et al. ("Teshirogi").

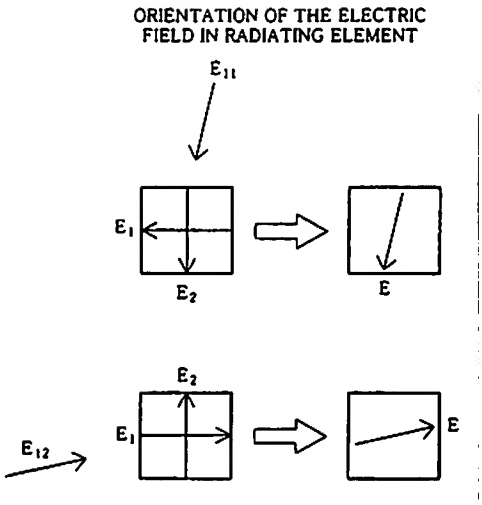
Reconsideration of this application is respectfully requested for the following reasons.

Claims 1-7 stand rejected over the combination of Milroy and Teshirogi. Milroy discloses a continuous transverse stub element device for flat plate antenna arrays. Teshirogi discloses a waveguide slot type radiator with a rectangular section surrounded by a pair of opposed narrow side plates.

Claim 1, which is the only independent claim, recites, inter alia, a planar metal-plated dielectric waveguide including *radiating elements having two symmetry planes are placed in nodes of a rhombic mesh on a surface of the planar waveguide*, as shown in Fig. 2A:



The radiating elements of Claim 1 are placed in nodes of a rhombic mesh considering that, if the radiating elements on the planar dielectric waveguide are arranged in square form, the propagation directions of beams excited by two different metal waveguides are led into the planar dielectric waveguide and are not substantially orthogonal, as illustrated in Fig. 5:



Accordingly, radiating elements need to be oriented so that the radiating elements are not orthogonal to each other in a plane of the planar dielectric waveguide, in order to generate orthogonally polarized waves in free space. Therefore, in the present invention, the radiating elements are arranged to be substantially orthogonal to propagation directions of beams excited by two different metal waveguides and led into the planar dielectric waveguide in the plane of the planar dielectric waveguide, and ultimately placed in nodes of a rhombic mesh that is not square. Accordingly, in the present invention, orthogonally polarized waves are generated in free space by placing radiating elements in nodes of a rhombic mesh so that the polarized waves do not form an orthogonal array on the surface of a planar dielectric waveguide.

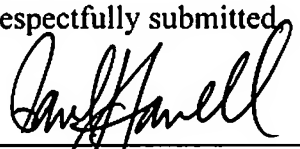
In contrast, Milroy, which the Examiner cites in regards to the recitation of the dielectric waveguide including *radiating elements having two symmetry planes are placed in nodes of a rhombic mesh on a surface of the planar waveguide*, discloses arranging the radiating elements of the planar dielectric waveguide in a square shape. Since the radiating elements of Milroy are arranged in square form, the propagation directions of beams excited by two different metal waveguides will not be substantially orthogonal and therefore Milroy fails to disclose or suggest *radiating elements having two symmetry planes*, as recited in Claim 1. Teshirogi fails to cure this defect of Milroy.

Accordingly, Milroy and Teshirogi, taken alone or in combination, fail to disclose or suggest a dielectric waveguide including *radiating elements having two symmetry planes are placed in nodes of a rhombic mesh on a surface of the planar waveguide*, as recited in Claim 1.

For at least this reason, the rejection if Claim 1 must be withdrawn. Without conceding patentability *per se*, Claims 2-7 are allowable at least in view of their dependency therefrom.

Accordingly, each pending claim, i.e. Claims 1-7, is believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, it is requested that the Examiner contact Applicant's attorney at the number given below.

Respectfully submitted,



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